



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/738,127	12/15/2000	Larry B. Li	50944.9900	9821

7590 05/05/2004

SCOTT A. HORSTEMEYER  
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, L.L.P.  
100 GALLERIA PARKWAY  
SUITE 1750  
ATLANTA, GA 30339

EXAMINER

DEMAKIS, JAMES A

ART UNIT	PAPER NUMBER
----------	--------------

2836

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/738,127	Applicant(s) LI, LARRY B.	
	Examiner James A Demakis	Art Unit 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-12 is/are allowed.
- 6) ☒ Claim(s) 13-15, 20 and 22 is/are rejected.
- 7) ☒ Claim(s) 16-18 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 13-15, 20,22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ravanelli et al (US PN 5789785) and in view of Colclaser et al (US PN 6327125).

Regarding claims 13-15,20,22:

Ravanelli et al disclose in Figure 2 an ESD protection circuit using a bipolar NPN transistor Q1 in reverse mode from a pad T1 to a ground T2 for biCMOS lcs. It does not disclose that the protected circuit operates at a high frequency, above 1 GHz.

Colclaser et al disclose that biCMOS lcs require ESD protection and that they operate currently in the 1-2 GHz range and next generation RF circuits are expected to operate above 10 GHz, see 5:20-25. Also, the protection circuit can be implemented in any of the standard processes, such as bipolar, CMOS, or biCMOS; see 5:40-43.

It would have been obvious to one having ordinary skill in the art at the time of the invention to have modified Ravanelli et al with the teaching of

Art Unit: 2836

Colclaser et al and minimize capacitive loading on the protected circuit and extend performance at higher frequencies.

***Allowable Subject Matter***

3. Claims 1-12 are allowed.

4. The following is an examiner's statement of reasons for allowance:

The above claims are allowed because the prior art of record fails to disclose or suggest a reverse mode transistor configured to protect a circuit between a pad and ground; and having a capacitance between the base and the emitter of about ten times less than the parasitic capacitance between the collector and the substrate..

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Claims 16-18,21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

6. Applicant's arguments, see Amendment, filed 1/30/2004, with respect to claims 1-12 have been fully considered and are persuasive. The rejection of these claims has been withdrawn.

7. Applicant's arguments with respect to claims 13-18,20-22 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2836

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A Demakis whose telephone number is 571.272.2050. The examiner can normally be reached on 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571.272.2800 ext. 36. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James A Demakis



**BRIAN SIRCUS**  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800